



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/014,527	12/14/2001	David Berkstresser	9323.014.00	3252
30827	7590	06/24/2004		
MCKENNA LONG & ALDRIDGE LLP 1900 K STREET, NW WASHINGTON, DC 20006			EXAMINER OJINI, EZIAMARA ANTHONY	
			ART UNIT 3723	PAPER NUMBER

DATE MAILED: 06/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/014,527

Applicant(s)

BERKSTRESSER ET AL.

Examiner

Anthony Ojini

Art Unit

3723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 13-21 is/are rejected.
- 7) ☒ Claim(s) 10 and 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "self alignment structures used to self align the rigid plate assembly receivable on the rotatable platen" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,3-8,11-18 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crevasse et al. (6,033,293) in view of Ward (6,398,905).

With respect to claims 1,3,4, Crevasse et al. disclose an apparatus in a CMP machine, comprising a rigid plate (34) having a top surface and a bottom surface, a polishing pad (32) provided on the top surface of the rigid plate (see fig. 2). Crevasse et al. also disclose the rigid plate is suctioned onto a top surface of a rotatable platen having a plurality of vacuum channels formed within the platen (see fig. 2). Crevasse et

Art Unit: 3723

al. show a prior art figure wherein a polishing pad (10) is adhesively bonded to a rigid plate (12) but fail to show the polishing pad (32) is adhesively bonded to the rigid plate (34).

Ward discloses the polishing pad (14) is adhesively bonded to the rigid plate (20).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide apparatus of Crevasse et al. with a polishing pad that is adhesively bonded to a rigid plate in view of Ward so as to adhered the polishing pad onto the plate during polishing of the substrate.

With respect to claim 5, Crevasse et al. disclose wherein at least one vacuum channel includes at least one cavity in a top surface of the rotatable platen to allow the rigid platen to be suctioned with a vacuum (see fig. 2).

With respect to claim 6, Crevasse et al. disclose wherein at least one vacuum channel (49) is coupled to a source of a releasable vacuum force (53,58) that act on the bottom surface of the platen to bias the rigid plate assembly (30) towards the rotatable platen (40).

With respect to claim 7, Crevasse et al. disclose wherein the source of releasable vacuum force is a vacuum source coupled to a switch for activating and deactivating the vacuum force so that the rigid plate member can be selectively secured onto and removed from the rotatable platen (see claim 8 of Crevasse et al.).

With respect to claims 8,18, Crevasse et al. disclose wherein the source comprises a vacuum and a vacuum line, and wherein the vacuum line opens to the at least one

Art Unit: 3723

vacuum channel and couples the at least one vacuum channel to the vacuum source (see claim 6 of Crevasse et al.).

With respect to claim 11, Crevasse et al. disclose wherein at the least one vacuum channel comprises a single cavity, circular in dimension having a single diameter greater than at least half of the diameter of the rotatable platen (see fig. 2).

With respect to claim 12, Crevasse et al. disclose wherein at the least one vacuum channel comprises a plurality of cavities, arranged to linearly radiate from the center of the top surface of the rotatable platen (see figs. 2, 2B).

With respect to claims 13,14,15, Crevasse et al. disclose a method to use a vacuum to hold a rigid plate assembly (32,34) to a rotatable platen (40) in a polishing apparatus, comprising the following steps: arranging a polishing pad (32) on a top surface of a rigid plate (34), to form a rigid plate assembly; and suctioning the rigid plate assembly (32,34) onto a top surface of the rotatable platen (40). Crevasse et al. also disclose a step of forming at least one vacuum channel within the rotatable platen wherein said at least one vacuum channel is formed by at least one cavity in a top surface of the rotatable platen (see fig. 2).

Crevasse et al. fail to show the step wherein polishing pad (32) is adhesively bonded to the rigid plate (34).

Ward discloses the polishing pad (14) is adhesively bonded to the rigid plate (20).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide apparatus of Crevasse et al. with a polishing pad that is

Art Unit: 3723

adhesively bonded to a rigid plate in view of Ward so as to adhered the polishing pad onto the plate during polishing of the substrate.

With respect to claim 16, Crevasse et al. disclose step of coupling at least one vacuum channel to a source of releasable vacuum force so as to act on bottom surface to pull the rigid plate assembly (30) towards the rotatable platen (see fig. 2).

With respect to claim 17, Crevasse et al. disclose wherein the source of releasable vacuum force is a vacuum source coupled to a switch for activating and deactivating the vacuum force so that the rigid plate member can be selectively secured onto and removed from the rotatable platen (see claim 8 of Crevasse et al.).

With respect to claim 20, Crevasse et al. disclose wherein a suctioning step is performed by asserting a vacuum between the rigid plate member (32,34) and the rotatable platen (see fig. 2).

With respect to claim 21, Crevasse et al. disclose vacuum is selectively applied (see col. 4, lines 56-58).

Claims 2,9,19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crevasse et al. (6,033,293) in view of Ward (6,398,905) as applied to claims 1,3,13 above, and further in view of Park et al (6,629,876 B1).

With respect to claims 2,9 and 19, Crevasse et al. fail to disclose the rigid plate member includes alignment pins protruding from the bottom surface thereof, wherein the alignment pins are being receive into guide openings formed on the rotatable platen.

Art Unit: 3723

Park et al. disclose rigid plate (131) that includes alignment pins (137) protruding from the bottom surface thereof, wherein the alignment pins are being receive into guide openings (177) formed on a chuck platen.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide apparatus of Crevasse et al. with a rigid plate that includes alignment pins protruding from the bottom surface thereof, wherein the alignment pins are being receive into guide openings formed on a chuck platen in view of Park et al. so as to ensure the rigid polishing plate is firmly retain on top of the rotatable platen during polishing.

Allowable Subject Matter

Claims 10 and 22 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, first paragraph, set forth in this Office action.

Response to Amendment

Applicant's arguments filed 5/7/04 have been fully considered but they are not persuasive.

Applicant argues that neither U.S. Patent No. 6,033,293 to Crevasse et al. nor U.S. Patent No. 6,398,905 to Ward, "either singularly or in combination, disclose each and every element recited in each of claims 1,3-8,11-18,20 and 21". However, with respect to claims 1,3-8,11-18,20 and 21, Crevasse et al. and Ward disclose each and every element recited.

Art Unit: 3723

Applicant argues that neither Crevasse et al. nor Ward “teach or suggest a polishing pad adhesively bonded to a top surface of a rigid plate member. Nor does either teach or suggest a rigid plate assembly suctioned onto the top surface of a rotatable platen” However, Crevasse et al. disclose the concept of an apparatus in a CMP machine, comprising a rigid plate (34) having a top surface and a bottom surface, a polishing pad (32) provided on the top surface of the rigid plate (see fig. 2). Crevasse et al. also disclose the rigid plate is suctioned onto a top surface of a rotatable platen having a plurality of vacuum channels formed within the platen (see fig. 2). Crevasse et al. show a prior art figure wherein a polishing pad (10) is adhesively bonded to a rigid plate (12) but fail to show the polishing pad (32) is adhesively bonded to the rigid plate (34). Ward discloses the polishing pad (14) is adhesively bonded to the rigid plate (20). It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide apparatus of Crevasse et al. with a polishing pad that is adhesively bonded to a rigid plate in view of Ward so as to adhere the polishing pad onto the plate during polishing of the substrate.

Applicant argues that neither U.S. Patent No. 6,629,876 B1 to Park et al. “fails to address the previously noted shortcomings discussed with reference to both Crevasse and Ward. The combined teachings of Crevasse, Ward and Park, fail to disclose each and every element recited in claims 2,9,10,19, and 22 as required under 35 U.S.C 103(a)”. However, **Park et al.** disclose the concept of a rigid plate (131) that includes alignment pins (137) protruding from the bottom surface thereof, wherein the alignment pins are being received into guide openings (177) formed on a chuck platen.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Ojini whose telephone number is 703 305 3768. The examiner can normally be reached on 7 to 4 Tuesday-Friday with every other Monday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Hail can be reached on 703 308 2687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3723

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AO
June 22, 2004

A handwritten signature in black ink, appearing to read "Joseph J. Hail, III". The signature is stylized with a large, looped "J" and a cursive "Hail".

Joseph J. Hail, III
Supervisory Patent Examiner
Technology Center 3700